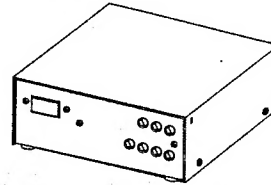


LOOP-WIRED HANDSET INTERCOM PAGING ADAPTOR

Model: **YAW-RB**, *Paging adaptor*

INSTALLATION & OPERATION MANUAL

This Manual and the Markings on the product contain various symbols in order that the product can be used safely and properly, and that the installer and user are protected from injury and property damage. The following precautions must be thoroughly read and understood before proceeding.



PRECAUTIONS ON INSTALLATION









WARNING Negligence could result in death or serious injury to people.



CAUTION Negligence could result in injury to people or damage to property.










WARNING

1. Do not dismantle or alter the unit. Fire or electric shock could result. 
2. Do not connect any power source other than specified to terminals +, - nor install two power supplies in parallel to single input. Fire or electric shock could result. 
3. Keep the unit away from water or any other liquid. Fire or electric shock could result. 
4. Do not put any metal into the unit though the openings. Fire or electric shock or unit trouble could result. 
5. Do not plug or unplug with wet hands. Electric shock could result. 
6. Do not use DC power supply with a voltage other than specified. Fire or electric shock could result. 



CAUTION

1. Before turning on power, make sure wires are not crossed or shorted. Fire or electric shock could result. 
2. When mounting the unit on wall, install the unit in a convenient location, but not where it could be jarred or bumped. Injury could result. 
3. Do not install or make any wire terminations while power supply is plugged in. It can cause electrical shock or damage to the unit. 
4. Do not manually hold down hook switch while testing and verifying call tone volume. The call tone is very loud in earpiece, and could cause hearing damage. 

5. Do not install the unit in any of the following locations. 
 - Fire, electric shock or unit trouble could result.
 - Places under direct sunlight, or near heating equipment that varies in temperature.
 - Places subject to dust, oil, chemicals.
 - Places subject to moisture and humidity extremes, such as bathroom, cellar, greenhouse, etc. 
 - Places where the temperature is quite low, such as inside a refrigerated area or in front of air-conditioner.
6. On products with ground terminals, connect to an earth ground. Fire or malfunction could result. 




GENERAL PRECAUTIONS

1. The unit is for domestic use only. Do not use outdoors.
2. When wall mounted, the unit may become dusty. Clean with a soft cloth.
3. In areas where broadcasting station antennas are close by, the intercom system may be affected by radio frequency interference.
4. The unit case may become a little warm with use, but this is not a unit malfunction.
5. If a cellular phone is used close by, the unit may malfunction.
6. Keep the unit more than 1m away from Radio or TV set.
7. If the intercom station is operated near OA equipment, Radio or TV, they interactively influence by radio frequency interference. Carefully select locations for both installation and operation.

Examples of Symbols;




**GENERAL
PRECAUTIONS**

The  mark indicates caution statement (incl. danger and warning), which is specifically shown inside.




**GENERAL
PROHIBITIONS**

The  mark indicates contents which prohibit a specific action shown inside or attached.



**GENERAL
INSTRUCTIONS**

The  mark indicates contents which demands a specific action shown inside or attached.



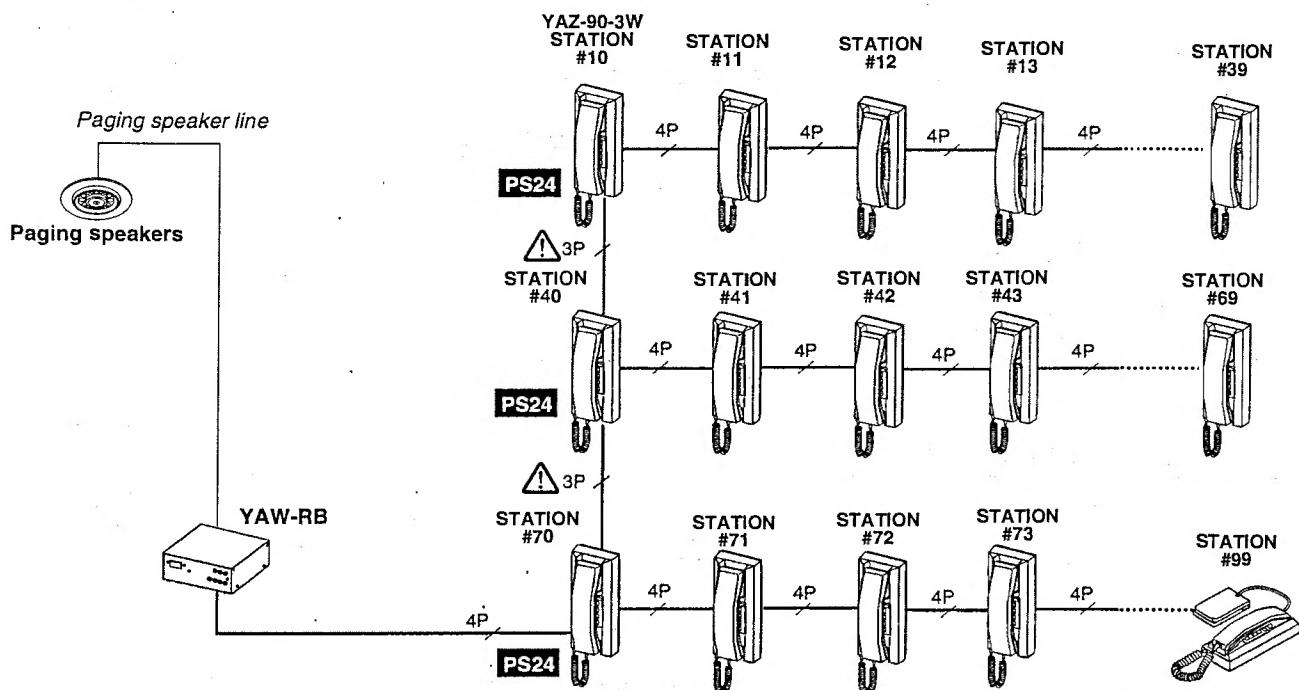
**DISMANTLE
PROHIBITIONS**



**MOISTURE
PROHIBITIONS**

1 SYSTEM OUTLINE & COMPONENTS

YAW-RB is a single-zone paging adaptor for use with YAZ Loop-wired handset intercom system. Max. 10 YAW-RB adaptors may be incorporated in 90-station YAZ-90-3W.



PS24 : PS-2420S, PS-2420DIN, PS-2420UL per 30-station wiring block

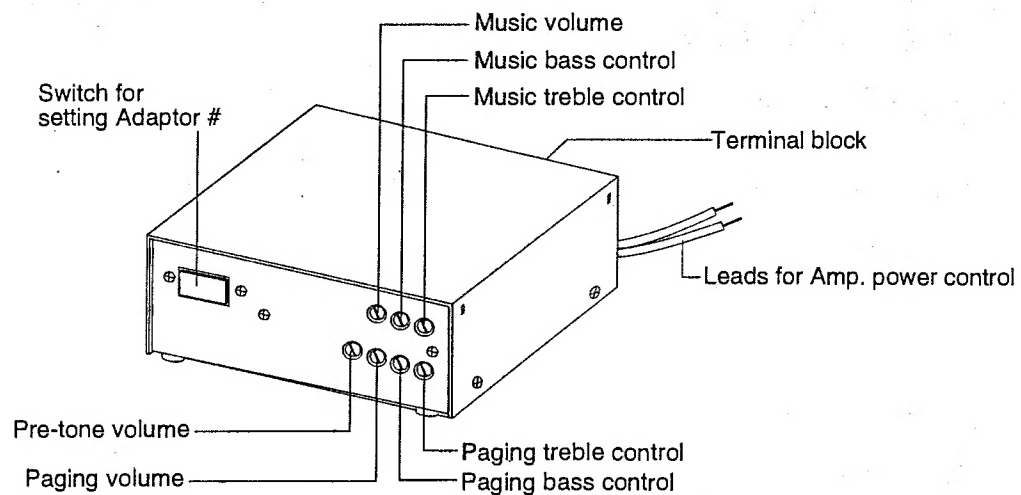
⚠ Do not connect Terminals \oplus , \ominus between 2 Blocks.

COMPONENTS

YAW-RB	Paging adaptor, 1 zone
YAZ-90-3W	Intercom station, 3 channels
PS-2420	24V DC power supply(2A)
YAK-A	Terminal box for desktop use of YAZ-90-3W
Paging amplifier	70.7V or 100V line
Paging speakers	Locally available, matching 70.7V or 100V line
Music source	See requirements on page 8.

PACKAGE CONTENTS

- Paging adaptor (YAW-RB)
- Mounting bracket
- Packet of screws
- Installation & Operation Manual

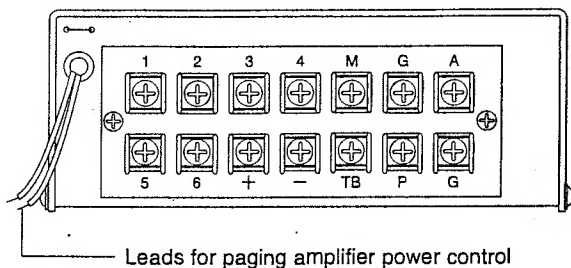


FEATURES

- YAZ-90-3W, max. 90-station intercom system adds up to 10 paging adaptors YAW-RB.
- Single zone page, operable at any YAZ-90-3W station.
- Accepts background music source.
- Paging amp. power control (turns on only when paging is initiated)
- Connected to YAZ-90-3W main loop-wired network.
- Adaptor # 0 ~ 9 programmable on each adaptor.

3 INSTALLATION

ACTUAL TERMINAL LOCATION



- 1, 2 : for paging voice & control signal (talk channel 1)
- 3, 4 : for paging voice & control signal (talk channel 2)
- 5, 6 : for paging voice & control signal (talk channel 3)
- +, - : 24V DC power supply

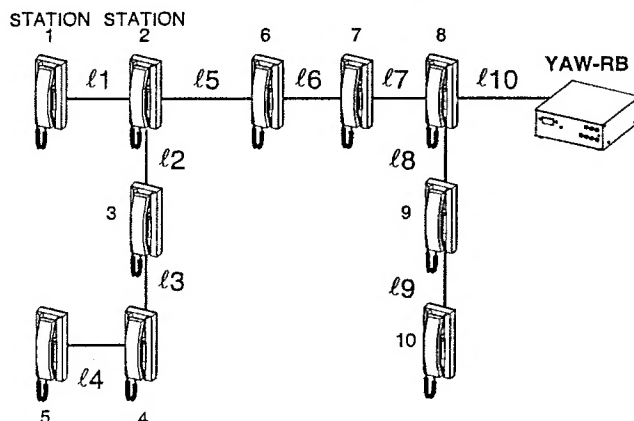
- M, G : for music signal input
- A, G : for paging and music output signals
- P, G } unused
- TB }

Wiring precautions

Wiring on terminals 1, 2; 3, 4; 5, 6; +, -

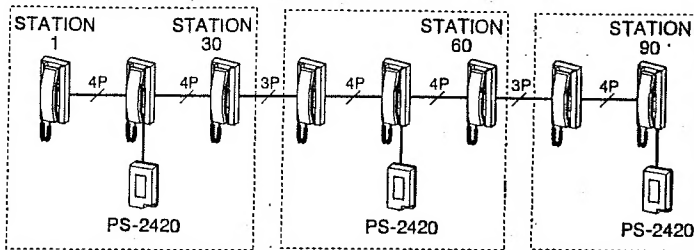
1. YAW-RB paging adaptors, employing electronic components, such as CPU and IC's, please use twisted pair cable in order to prevent the unit from being interfered with line inductive noises generated by surrounding electrical appliances and from crosstalk and malfunction caused by the cable conductors themselves.
 2. Connect first twisted pair to Terminals 1, 2, second twisted pair to Terminals 3, 4, third twisted pair to Terminals 5, 6. DO NOT CROSS WIRES.
 3. Power supply lines must be wired symmetrically so that electrical resistance of + and - lines would be equal, otherwise crosstalk or malfunction may take place.
 4. Do not connect two twisted pairs or more for each communication line. For power supply line, please connect two twisted pairs as shown below, if required.
 5. When running cable along with or crossed with AC power line and/or weak currency line (paging, signal transmitting lines), please keep the cable at least 30cm (1') away from those lines or run the cable through the metal conduit.
 6. The total wiring distance should not exceed 2.9 km (1.8 mile) with 0.8mm dia. (20AWG) cable. ($\ell_1 + \ell_2 + \ell_3 + \dots \ell_9 + \ell_{10}$ in the illustration below)
- Note; The line loop resistance should not exceed 200 Ohm for communication line between YAW-RB adaptor and the remotest phone (Station #5).

DIAMETER	ø 0.5mm	ø 0.65mm	ø 0.8mm
DISTANCE	1,100m	1,900m	2,900m
AWG	24AWG	22AWG	20AWG
DISTANCE	0.7 mile	1.2 mile	1.8 mile



Power supply

7. Power supply adaptor should be installed per every 30 YAZ-90-3W stations. When system includes paging adaptors, these adaptors should be counted as mentioned below, in view of the bigger current consumption of the adaptors.



Notes;

- When power supply is installed in each wiring block: #1, 2 and 3 as shown in the left illustration, do not connect +, - terminals between two blocks.
- The loop resistance of power supply line between PS-2420 power supply and the farthest station (or adaptor) in each block, should be less than 20 Ohm.

No. of YAZ-90-3W used	Power supply required	Location of Power supply
Up to 30 stations	1 pcs	Install PS-2420 power supply in the center of each wiring block of 30 stations.
From 31 to 60 stations	2 pcs	
From 61 to 90 stations	3 pcs	

Paging adaptors

When deciding number of power supplies necessary for an entire system, please add the station number for each paging adaptor.

- One YAW-RB adaptor equivalent with 2 units YAZ-90-3W.

Wiring on M, G, A (on YAW-RB) to music source output/paging or music amplifier input

Use shielded wires and locate YAW-RB adaptors as close as possible to the Amplifier and music source.

Other instructions

1. It is recommended that AUX terminals be used for amplifier input. If PHONE terminals are used, the tone quality of both paging and music would deteriorate due to the RIAA equalizing circuits included, etc. If case PHONO terminals must be used, make tone adjustment on YAW-RB paging adaptor, taking the above into account.
2. It is suggested that YAW-RB paging adaptors should be installed near the center of the system, along with power supply PS-2420. However, YAW-RB must be kept more than 20cm (8") away from PS-2420 to avoid inductive noise.

Amplifier power control line

1. On YAW-RB paging adaptors, there are two dry make contacts for turning on paging amplifier only when paging is initiated.
2. YAZ-90-3W station selects a YAW-RB adaptor, by pressing [.] and adaptor # 0 ~ 9, which turns paging amplifier power on. After the handset is replaced, paging amplifier turns to OFF position.
3. YAW-RB contact capacity is AC 24V,10A; DC 24V,10A (loaded resistance).
4. When controlling AC power line with the YAW-RB, the amplifier's dash current must be taken into account. If it exceeds the rated contact capacity, control should be made via an additional power relay.
5. YAW-RB power control line remains unused when background music is included.
6. When another manufacturer's amplifier requiring longer set-up time is used, it may be that the pre-tone is cut off, if page button in handset is pressed right after and number button are pressed.

3 INSTALLATION (continued)

Setting Adaptor

In YAZ-90-3W system, a total of 10 paging adaptors may be connected.

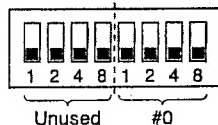
- Either number from 0 to 9 may be set freely by the switch provided for each adaptor.
- When system includes only one adaptor either for paging, it is not necessary to set # for the adaptor. In this case, the number for the paging adaptor is set for 0 automatically.
- Do not use the same number for two or more adaptors.

STEP #2

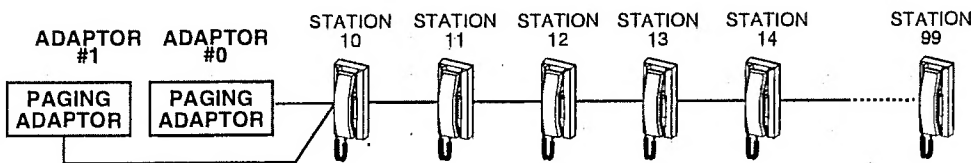
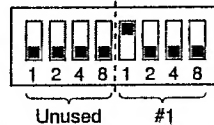
On the DIP SWITCH section (Front of the unit), locate the switches to verify the STATION number for the station.

Example;

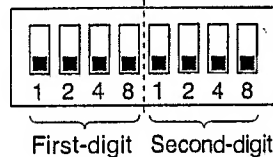
STATION #0



STATION #1



DIP SWITCH (Front of the unit)



Paging speakers impedance matching

Decide the number of speakers so that the total power consumed for speakers would be equal to the output power of amplifier (but the total speaker input should not exceed 100W).

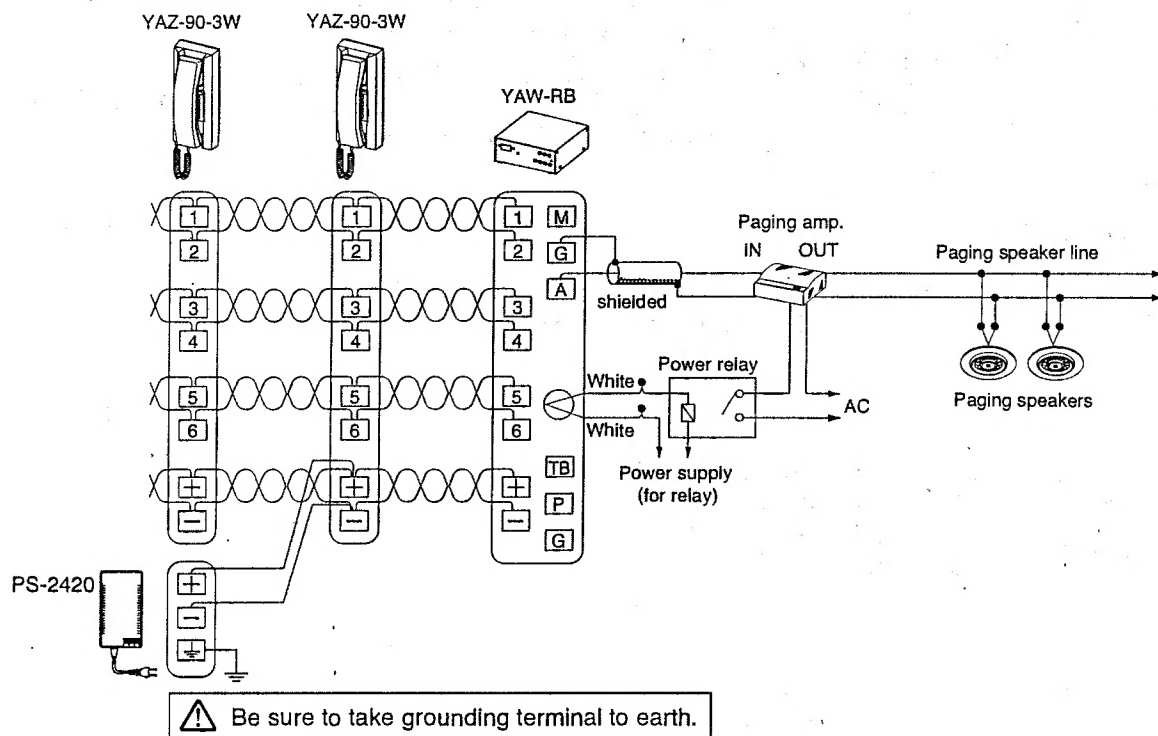
Adjusting Controls

Upon completing all the wiring connections, proceed with the following steps before turning on all the equipment.

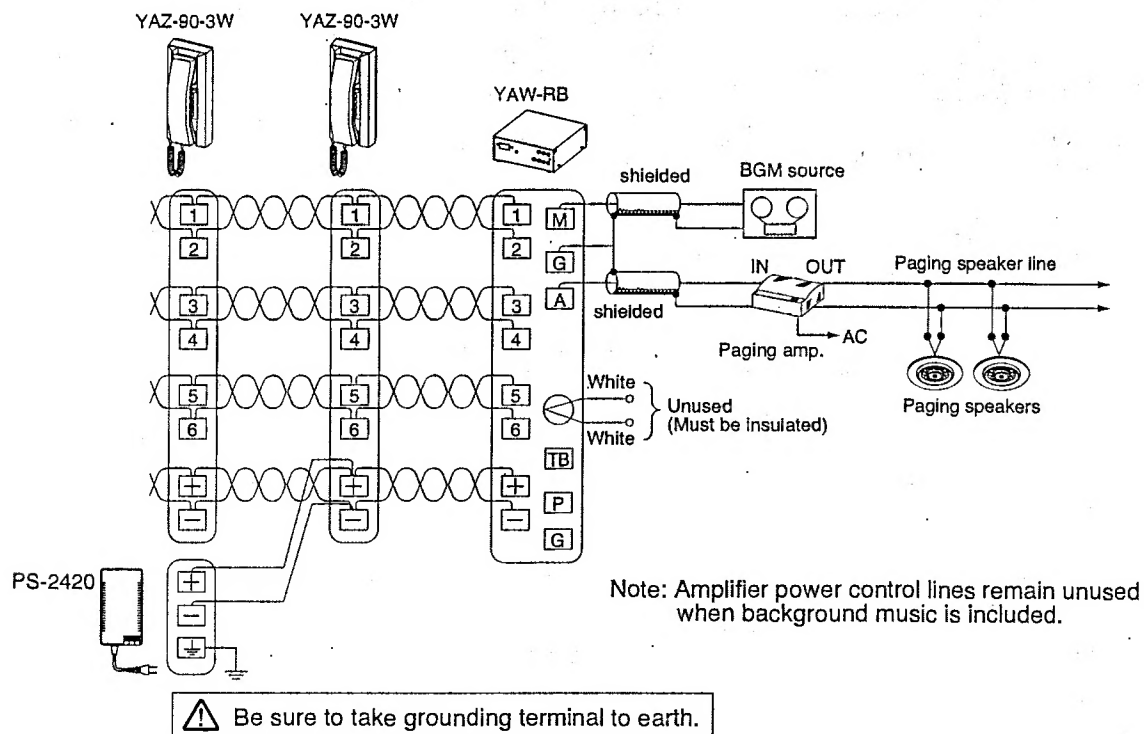
1. Set YAW-RB VOLUME, TREBLE, BASS controls (and of paging amplifier and music source, if included) at MIDPOINT.
2. Turn on power supply PS-2420 of YAZ system, paging amplifier, music source.
3. Initiate paging operations (prior to music control adjustment).
4. Adjust paging VOLUME control on YAW-RB to achieve desired level. Fine tune paging TREBLE & BASS controls on YAW-RB. In places where a YAZ-90-3W phone is located near the paging speakers, feedback might take place, if the paging volume is too high.
5. Adjust YAW-RB music VOLUME control to achieve desired music level. Fine tune music TREBLE & BASS, while listening to the music (Adjustment of music VOLUME, TREBLE & BASS controls can be made on music, if included).

4 WIRING DIAGRAMS

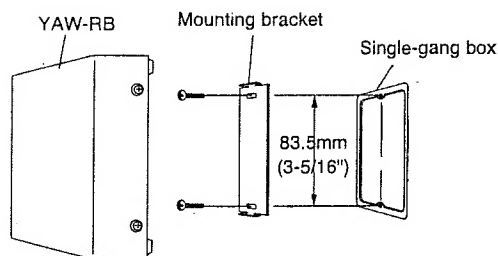
1. Paging (w/Amp. power control)



2. Paging (w/Music source connected)



5 MOUNTING



Attach the mounting bracket to wall or single-gang box. Insert the prongs of the bracket into the holes of YAW-RB chassis and pull the unit downward until properly locked.

Select a location where the unit is not exposed to public in order to avoid injury or tampering. YAW-RB unit may be mounted on the shelf or rack.

6 OPERATIONS

Paging operations on YAZ-90-3W station

In YAZ-90-3W system with YAW-RB paging adaptor;

At YAZ-90-3W station;

1. Pick up handset.
2. Press button.
3. Press a dial button (0 ~ 9) assigned for YAW-RB adaptor.
4. Page while depressing and holding down PAGE button in handset.
Pre-tone sounds at the paging speakers.
5. After paging, hang up handset.

7 TECHNICAL PRECAUTIONS

Before asking for repairs When system malfunctions, do not attempt to remove or change any unit. Call the installing dealer or representative.

Cleaning Clean YAZ-90-3W equipment with a soft cloth dampened with neutral household cleanser. Never use any abrasive cleaner or cloth.

8 SPECIFICATIONS

- | | |
|--|--|
| • Power source | : Extend DC 24V from your YAZ system. |
| • Current consumption | : Less than 30mA in standby mode.
Less than 90mA in paging mode. |
| • Music input impedance/ level | : 20K Ohm/300mV (RMS), 1KHz. |
| • Music output impedance/ level | : 600 Ohm/150mV (RMS), 1KHz. |
| • Paging input impedance / level | : 600 Ohm/78mV (RMS), 1KHz. |
| • Paging output impedance/ level | : 600 Ohm/300mV (RMS), 1KHz. |
| • Permitted line resistance | : 20 Ohm Loop for power supply line.
200 Ohm Loop for communication line. |
| • Contact capacity for paging amp. control | : AC 24V, 10A. DC 24V, 10A. |

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

WARRANTY

- Aiphone warrants its products to be free from defects of material and workmanship under normal use and service for a period of one year after delivery to the ultimate user and will repair free of charge or replace at no charge, should it become defective upon which examination shall disclose to be defective and under warranty. Aiphone reserves unto itself the sole right to make the final decision whether there is a defect in materials and/or workmanship; and whether or not the product is within the warranty.
- This warranty shall not apply to any Aiphone product which has been subject to misuse, neglect, accident, or to use in violation of instructions furnished, nor extended to units which have been repaired or altered outside of the factory.
- This warranty does not cover batteries or damage caused by batteries used in connection with the unit.
- This warranty covers bench repairs only, and any repairs must be made at the shop or place designated in writing by Aiphone.
- Aiphone will not be responsible for any costs incurred involving on site service calls.

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